

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method comprising:

receiving network data in a first format via a first card coupled to a first network;

converting the data to a synchronous optical network (SONET/SDH) format;

transmitting the SONET/SDH formatted data from the first card as a first set of one or more serial data signals to a cross-connect card via a backplane;

using an application specific integrated circuit (ASIC) on the cross-connect card for:

performing serial-to-parallel conversion on the SONET/SDH formatted data in the first set of one or more serial data signals,

performing switching functions on the SONET/SDH formatted data using the cross-connect card, and

performing parallel-to-serial conversion on the switched SONET/SDH formatted data to generate a second set of one or more serial data signals;

transmitting the SONET/SDH formatted data as a second set of one or more serial data signals to a second card via the backplane, the second card being coupled to a second network; and

converting the SONET/SDH formatted data to a second format and transmitting the data in the second format to the second network using the second card,

wherein the backplane utilizes a common signaling scheme to communicatively connect the first card, second card, and cross-connect card.

2. (Previously Presented) The method of claim 1 wherein performing switching functions on the SONET/SDH formatted data comprises performing time switching and space switching.

3. (Cancelled)

4. (Currently Amended) The method of claim 1 wherein each of the first and second sets of one or more serial data signals are transmitted via the backplane as a differential pair.

5. (Original) The method of claim 1 wherein the data in the second format comprises an aggregation of multiple data signals in the first format.

6-7. (Cancelled)

8. (Previously Presented) The method of claim 1, further comprising communicating the SONET/SDH formatted data according to one of STS-1, STS-3, STS-12, STS-48 and STS-192 protocols.

9. (Currently Amended) An apparatus comprising:

means for receiving network data in a first format via a first card coupled to a first network

means for converting the data to a synchronous optical network (SONET/SDH) format;

means for transmitting the SONET/SDH formatted data from the first card as a first set of one or more serial data signals to a cross-connect card via a backplane;

means for using an application specific integrated circuit (ASIC) on the cross-connect card to:

perform serial-to-parallel conversion on the SONET/SDH formatted data in the first set of one or more serial data signals,

performing switching functions on the SONET/SDH formatted data at the cross-connect card, and +

perform parallel-to-serial conversion on the switched SONET/SDH formatted data to generate a second set of one or more serial data signals;

~~means for transmitting the SONET/SDH formatted data at the cross connect card;~~

means for transmitting the SONET/SDH formatted data as the second set of one or more serial data signals to a second card via the backplane, the second card being coupled to a second network;

means for converting the SONET/SDH formatted data to a second format; and

means for transmitting the data in the second format to the second network via the second card,

wherein the backplane utilizes a common signaling scheme to communicatively connect the first card, second card, and cross-connect card.

10. (Previously Presented) The apparatus of claim 9 wherein the means for performing switching functions on the SONET/SDH formatted data comprises means for performing time switching and space switching.

11. (Cancelled)

12. (Previously Presented) The apparatus of claim 9 wherein each of the first and second sets of one or more serial data signals is transmitted via the backplane as a differential pair.

13. (Original) The apparatus of claim 9 wherein the data in the second format comprises an aggregation of multiple data signals in the first format.

14-15. (Cancelled)

16. (Previously Presented) The method of claim 9 further comprising means for communicating the SONET/SDH formatted data according to one of STS-1, STS-3, STS-12, STS-48 and STS-192 protocols.

17. (Previously Presented) A system comprising:

a first card coupled to a first network compatible with a first data format, the first card being configured to convert data from the first data format to a synchronous optical network (SONET/SDH) format, and vice versa;

a second card coupled to a second network compatible with a second data format, the second card being configured to convert data in the second data format to the SONET/SDH format, and vice versa;

a cross-connect card configured to perform switching functions on data in the SONET/SDH format; and

a backplane communicatively connecting the first card, second card, and cross-connect card, the backplane being configured to use a common signaling scheme to carry data in the SONET/SDH format as one or more serial data signals between the first card, the cross-connect card, and the second card,

wherein the cross-connect card includes an application specific integrated circuit (ASIC) for:

performing serial-to-parallel conversion on the SONET/SDH formatted data,

performing the switching functions on the SONET/SDH formatted data, and

performing parallel-to-serial conversion on the SONET/SDH formatted data.

18. (Previously Presented) The system of claim 17, wherein the first and second cards each include an application specific integrated circuit (ASIC) configured to perform parallel-to-

serial conversion and serial-to-parallel conversion on data in the SONET/SDH format.

19. (Previously Presented) The system of claim 18, wherein the ASIC is configured to perform parallel-to-serial conversion on the data in the SONET/SDH format, thereby making the data suitable for transmission to the cross-connect card via the backplane.

20. (Previously Presented) The system of claim 18, wherein the ASIC is configured to perform serial-to-parallel conversion on the data in the SONET/SDH format, the data being received from the cross-connect card via the backplane.

21. (Previously Presented) The system of claim 17, wherein the cross-connect card includes an application specific integrated circuit (ASIC) configured to perform the switching functions on the data in the SONET/SDH format.

22. (Previously Presented) The system of claim 17, wherein the cross-connect card includes a first and second application specific integrated circuit (ASIC), each of the first and second ASICs being configured to perform parallel-to-serial conversion

and serial-to-parallel conversion on data in the SONET/SDH format.

23. (Previously Presented) The system comprising:

a first card coupled to a first network compatible with a first data format, the first card being configured to convert data from the first data format to a synchronous optical network (SONET/SDH) format, and vice versa;

a second card coupled to a second network compatible with a second data format, the second card being configured to convert data in the second data format to the SONET/SDH format, and vice versa;

a cross-connect card configured to perform switching functions on data in the SONET/SDH format; and

a backplane communicatively connecting the first card, second card, and cross-connect card, the backplane being configured to use a common signaling scheme to carry data in the SONET/SDH format as one or more serial data signals between the first card, the cross-connect card, and the second card,

wherein the cross-connect card includes a first and second application specific integrated circuit (ASIC), each of the first and second ASICs being configured to perform parallel-to-

serial conversion and serial-to-parallel conversion on data in the SONET/SDH format,

the first ASIC is configured to perform serial-to-parallel conversion on the data in the SONET/SDH format, the data being received from the first card via the backplane,

the second ASIC is configured to perform parallel-to-serial conversion on the data in the SONET/SDH format, thereby making the data suitable for transmission to the second card via the backplane, and

the cross-connect card further comprises a third ASIC configured to perform the switching functions on the data converted by the first ASIC, the switched data being sent to the second ASIC for conversion.

24. (Previously Presented) The method of claim 1, wherein the common signaling scheme utilizes differential pair signaling at a predetermined frequency.

25. (Previously Presented) The method of claim 1, wherein the backplane includes a plurality of card slots, the first and second cards being plugged into respective ones of the plurality of card slots.

26. (Previously Presented) The method of claim 25, further comprising:

plugging a third card into an unused one of the plurality of card slots, the third card being coupled to a third network; and

using the cross-connect card to perform switching functions on data to be communicated between the third network and at least one of the first and second networks.

27. (Previously Presented) The system of claim 17, wherein the common signaling scheme utilizes differential pair signaling at a predetermined frequency.

28. (Previously Presented) The system of claim 17, wherein the backplane includes a plurality of card slots, the first and second cards being plugged into respective ones of the plurality of card slots.

29. (Previously Presented) The system of claim 28, wherein the first and second cards are each interchangeable with a third card, the third card being coupled to a third network, thereby allowing the cross-connect card to perform switching functions with respect to the third network.